

CLAIMS:

1. An optical amplifier comprising:  
an optical amplifying medium;  
an excitation source which excites said optical  
amplifying medium; and  
at least one of a first monitoring means for monitoring  
an amplified multiplexed light from said optical amplifying  
medium and a second monitoring means for monitoring a  
multiplexed light input to said optical amplifying medium;  
wherein an operation amount of said excitation source for  
said optical amplifying medium is controlled using a  
monitoring result output from at least one of said first and  
second monitoring means.